DOC. 16

IN THE COURT OF COMMON PLEAS

CUYAHOGA COUNTY, OHIO

HELEN KUBACH, etc.,

Plaintiff,

-vs-

JUDGE O'DONNELL
CASE NO. 153,602

UNIVERSITY HOSPITALS OF CLEVELAND, et al.,

Defendants.

- - - -

Deposition of ALLEN I. ARIEFF, M.D., taken as if upon cross-examination before William L. Odom, a Registered Professional Reporter and Notary Public within and for the State of Ohio, at the offices of Jacobson, Maynard, Tuschman & Kalur, 1301 East Ninth Street, Fourteenth Floor, Cleveland, Ohio, at 6:25 P.M. on Wednesday, October 4, 1989, pursuant to notice and/or stipulations of counsel, on behalf of the Plaintiff in this cause.

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On behalf of the Defendant
Kursh, et al.

ALLEN I. ARIEFF, M.D., of lawful age, called by the Plaintiff for the purpose of cross-examination, as provided by the Rules of Civil Procedure, being by me first duly sworn, as hereinafter certified, deposed and said as follows:

CROSS-EXAMINATION OF ALLEN I. ARIEFF, M.D.

BY MR. KAMPINSRI:

Q. Doctor, would you state your full name, please.

A. Allen I. Arieff.

Q. Doctor, I'm going to ask you a number of questions this evening. If you don't understand any of them, please tell me, I'll be happy to rephrase any questions you don't understand, is that all right?

A. Okay.

Q. When you respond to my questions, you have to do so verbally. He's going to take down everything you say. He can't take down a nod of your head; okay?

A. Okay.

Q. Do you have a CV, doctor?

THE WITNESS: I sent you one.

MR. JACKSON: We'll get it to you. We don't have a copy handy right now.

A. I'll have one in the mail to you as soon as I get back to my office.

MR. JACKSON: We can give him one from our file.

MR. LUDGIN: I looked, I couldn't find one, that's why we don't have one right now.

MR. JACKSON: We'll get you a CV.

Q. Why don't you briefly run me through your educational background, doctor.

A. Graduated University of Illinois, liberal arts, in 1960; Northwestern University, master of science, 1964; M.D. from Northwestern, also in 1964. Intern, University of Pennsylvania, 1965. Two years in the Army. Medical resident at New York State University up to 1969. Fellow in renal diseases at the University of Colorado for one year, then three years at UCLA. Faculty at UCLA for four years, and then University of California at San Francisco from 1977 till the present. Currently professor of medicine, University of San Francisco Medical Center in San Francisco.

Q. As a professor, do you also practice medicine or do you teach or what do you do, doctor?

A. I spend about a third of my time doing research, teaching and patient care, about a third to each.
Q. A third patient care?
A. Yes.
Q. A third research?
A. Yes. And a third teaching.
Q. Where is your patient care at?
A. At the University of California Teaching Hospitals.
Q. And how long has that been true for, that you've devoted your time in this fashion?
A. Really since about 1975 at least.
Q. Your specialty is what, doctor?
A. Internal medicine and subspecialty of nephrology. And I'm board certified in both of them.
Q. You've authored a number of papers that I'm aware of. Are they all set forth in your CV?
A. Yes.
Q. Rather than have you list them all now.
A. There's about 300 of them. They are all in my CV.
Q. Have you authored any papers on hyperammonemia?
A. Yes, one in the New England Journal of Medicine

in 1987.
Q. Is that the one co-authored with Dr. Ayus?
A. No.
Q. What was the topic?
A. Liver failure. I'm sorry, make that in 1985. That is in error. It was the New England Journal, 1985. Excuse me.
Q. And how was that related to hyperammonemia?
A. Well, hyperammonemia is a major part of liver failure.
Q. You can have hyperammonemia in the absence of liver failure, though, can you not?
A. You can?
Q. Can't you?
A. Well, it's possible but very unusual.
Q. Did Mr. Kubach in your opinion have liver failure?
A. No, he didn't.
Q. All right. Did he have hyperammonemia?
A. He had at least one laboratory value that was elevated, yes.
Q. Is that indicative of hyperammonemia?
A. Yes.
Q. Can you have central nervous system depression as a result of hyperammonemia?

A. No one has ever shown that to be the case. That has never been shown to be the case.

Q. Are there any papers that you're aware of that indicate that is not the case?

A. In all of science, negatives are never proven. In other words, it is contingent upon someone to prove a positive. We don't know that you can't have liver failure because of eating too many oranges. I doubt if there's ever been a paper on that, but no one would ever assume that to be the case, either. So I don't know that there's any papers that show that hyperammonemia doesn't cause depression sensorium or coma, but no one has ever shown that it does.

Q. Are you aware of any case studies that indicate that it does?

A. In the absence of liver disease?

Q. Yes.

A. No, I'm not.

Q. Would that change your mind if you became aware of those?

A. I'd have to read it. I can't comment without reading it.

Q. Did you do any search to determine if in fact there was any evidence that related central

nervous system depression to hyperammonemia?
A. Yes. I did a computer search as recently as about three weeks ago and I found no such evidence of anything, in the National Library of Medicine computer. Now, it's possible that something is filed under a different name or a different key word and was missed by the computer. But if there is such a thing, it must be extraordinarily rare and very poorly documented since it also doesn't appear in any standard textbook.
Q. Well, hyperammonemia in and of itself is not a common occurrence, is it?
A. No, it's not.
Q. Doctor, what do you believe caused Mr. Kubach's death?
A. Hyponatremic encephalopathy, second hypoxic encephalopathy, and permanent brain damage and respiratory failure on that basis.
Q. If he had been prophylactically intubated, would he have suffered the respiratory arrest?
A. When do you mean prophylactically intubated?
Q. Let's say 6 o'clock on the evening of his arrest.
A. It wouldn't have made any difference.

35 minutes into the resection, the patient became acutely obtunded and had evidence of agitation. His pupils were dilated. This was felt to be evidence of water intoxication and the resection was immediately stopped."

Q. Yes.

A. At this point laboratory-wise he had a sodium of 102 very shortly thereafter, actually within a very few minutes. He also had a blood gas that showed a bicarbonate of approximately 16 millimoles per liter, where his normal bicarbonate was 24.

— breathing PCO2 will go up PO2 will go down

At this point or somewhere close to it, he had respiratory embarrassment from his hyponatremia with a sodium of approximately 102 which from the literature and from my experience of over 130 such patients will always lead to permanent brain damage or death.

Q. Do you try to correct the sodium imbalance, doctor, in your experience when you have a sodium imbalance as a result of water intoxication?

A. Yes.

Q. And how do you do that?

A. Well, there are ways that are demarcated. One

of the best I think is in a paper I co-authored with Dr. Ayus.

Q. When?

A. In 1987, October.

Q. Is there a standard for the level at which you would correct the sodium?

A. I think most people would agree that correcting it on a rate of anywhere from about one-half to about three millimoles per liter per hour to get the sodium somewhere above 120 but less than about 135 would usually be satisfactory. There are disagreements in general but that's probably about average. That covers most disagreements.

Q. The paper that you were involved with Dr. Ayus in is held to be fairly authoritative in terms of the standard of how to correct it. Would you not agree?

A. I find it hard to disagree with that.

Q. Okay. And is it the level, the amount, that determines the safe rate of increasing it?

A. I don't think the rate makes very much difference.

Q. All right. What is determinant as to a safe increase? Is it an amount of increase over a period of time?

A. Bearing in mind that everybody doesn't accept this, what Dr. Ayus and I found I believe to be correct is that correcting a sodium of less than about 25 millimoles in the initial 48 hours is probably the best thing to do for the patient.

Q. As a matter of fact, I think you concluded in the paper that if you do it at more than that rate, it can lead to brain damage; is that correct?

A. That's correct.

Q. How much was it increased in Mr. Kubach?

A. At what time period?

Q. Well, at any time prior to the arrest.

A. He had a lot of sodiums done.

Q. In the initial 48 hours.

A. Don't forget, though, in that paper and in our subsequent work, actually Dr. Ayus and I are working on a study now, it turns out that when someone had a respiratory arrest as I believe this patient did during the operation, or respiratory embarrassment, that they are going to suffer permanent brain damage, whatever is done. What Dr. Ayus and I put together in the study in the New England Journal in October of '87 is the best way to manage it, or I believe

to be the best way to manage it.

Now, this individual had -- there's a lot of sodiums here. Just a moment.

His sodium was corrected by roughly 30 millimoles in about 14 hours.

Q. Which is in excess of what both you and Dr. Ayus recommended in your article?

A. That's correct.

Q. Did that cause any damage to Mr. Kubach in your opinion?

A. I believe not.

Q. Why not?

A. Because I think the damage was suffered during -- at approximately 10:15 a.m. during the operation, and that all subsequent things were largely after the damage was already done.

I should also add, by the way, that this case took place before our article was published, so I don't think it's really fair to hold someone to a standard which was not in existence at that time.

Q. When was your article submitted for publication, doctor?

A. Submitted?

A. I honestly don't remember that. I do have it in my files, but I don't remember.

Q. 1986, presented in part at the 19th annual meeting of the American Society of Nephrology.

A. It was published, though, in October of '87. And in the medical profession, abstracts of presentations are always considered preliminary because they're not subject to critical review. Any abstract which is submitted is automatically published. It's only when the article comes out in published form that it's been subjected to critical review.

Q. Doctor, what did you review in this case for purposes of preparing an opinion?

A. The hospital records and depositions.

Q. Which depositions?

A. Perhaps you can help me out. I don't remember all of them.

MR. JACKSON: Can you remember all of it, the ones you reviewed? If you can't, you just tell him that.

A. I can't remember all the names.

Q. Where are they?

A. At home.

Q. Did you review the depositions of Dr. Nearman

and Dr. Kursh?
A. Yes, I did.
Q. The deposition of Dr. Jayanthi?
A. Yes.
Q. Candace Lamb?
A. I don't recall reviewing that deposition.
Q. Dr. Angell?
A. Yes.
Q. Dr. Di Ciccio?
A. Yes.
Q. Dr. Townsend?
A. I don't recall reviewing that.
Q. Nurse Hemminger?
A. No.
Q. Have you reviewed Dr. Ayus's deposition?
A. Yes.
Q. And Dr. Lockrem?
A. Yes.
Q. Do you believe that Mr. Kubach would have suffered respiratory arrest if he had been prophylactically intubated, as opposed to the brain damage you believe he suffered during the operation?
A. He would have to be not only intubated but also mechanically ventilated, received ventilatory

assistance.

Q. Is that because --

A. Intubation will not prevent someone from suffering a respiratory arrest unless their ventilation is assisted.

Q. So that if he had been intubated with a ventilatory assistance, do you believe he would have suffered the respiratory arrest?

A. When? Intubating him at what point?

Q. Anytime prior to the arrest.

A. Well, I feel his respiratory compromise occurred at approximately 10:15 a.m., and if he had been intubated before 10:15 a.m. with mechanical ventilation during the operation, I guess he would not have suffered a respiratory arrest.

Q. What were his blood gases like throughout the day, doctor?

A. Well, his admission -- do you want me to read them to you?

MR. JACKSON: You want the day that he had the respiratory arrest?

MR. KAMPINSKI: Yes, after the operation.

MR. JACKSON: You want him to comment on them in general **or** do you want him to

specifically read them? What would you like?

MR. KAMPINSKI: Well, he could read them if he needs to refresh his recollection.

MR. JACKSON: Are you suggesting he should have memorized all the blood gases?

MR. KAMPINSKI: I'm not suggesting anything. If he knew what they were, that would be fine. If he doesn't, he can look at them.

THE WITNESS: There's a preoperative gas which I was just looking at a little while ago.

Do you know where that is?

Okay. His gas after the arrest --

Q. I'm sorry, after the operation?

A. His gas after the operation showed a PC02 of 27 and a PO2 of 196, and a bicarbonate of 17.5.

Q. What time was that taken, doctor?

A. 11:35.

Now, that gas is interesting because the bicarbonate is low and it's right after the, when I feel he had a respiratory embarrassment during surgery. That is indicative of lactic acidosis. He had to have been receiving assisted ventilation then because his PC02 is far lower than one would expect one to be able

to do on their own, especially with chronic lung disease that this man had. And the PO2 of close to 200 is far higher than one would be able to generate even on 40 percent oxygen without assisted ventilation. So I think his gas completely supported what I feel happened during the operation of respiratory embarrassment.

Q. And this is --

A. We know his normal bicarbonate, by the way, which was done on 8/27, 24. So he has to have some chronic problem because his bicarbonate just before surgery is 24, and furthermore a chemical bicarbonate done about the same time is 16 which comes across very well with the 17-1/2.

Q. I'm sorry, I don't understand. You said he had chronic lung disease and a moment ago you said that he didn't have a chronic problem. Did I misunderstand?

A. Didn't have a chronic problem with his bicarbonate. He didn't have a chronic acidosis.

Q. I see.

A. Because the bicarbonate is normal. With his chronic lung disease, he would not be expected to be able to get his PC02 down to 27 on his own which means that to me he was being assisted

with his ventilation with a bag. And the other thing as I mentioned, his oxygen is close to 200, which you would not expect someone to be able to generate on his own even with oxygen. It is not impossible, but it is very unlikely.

Q. Well, are you saying that his blood gases were normal, then, before the operation?

A. **No**, they're not normal at all.

Q. Did they suggest, then, to whoever was watching them that he should have been intubated, perhaps mechanically ventilated?

A. No.

Q. Well, what do they mean?

A. Retrospectively, they suggest that he had respiratory embarrassment within an hour or two before they were drawn.

Q. And then did they get better?

A. They eventually did, certainly. The bicarbonate eventually came back up to normal again. In fact, that same day at....

Q. The next one is at what time, doctor, 1420?

A. 1420, okay. The blood gas which **I** believe to be done at 1420 shows a bicarbonate of 22.1, and the one the next one down shows a bicarbonate of 24.4 which is about what it was before the

operation. So he did correct the metabolic acidosis that he had shortly after coming out of the operating room.

Q Is that important to you in terms of your opinion, doctor, or doesn't that matter?

A Well, it matters only to the extent -- it doesn't really make that much difference. The main thing is the difference between the 24 before the operation, the fact that he was back to 24 again after the operation, and was low, 16 to 17-1/2, at a point after I believe he suffered respiratory embarrassment.

Q. Well, respiratory embarrassment doesn't necessarily mean you're going to sustain brain damage, does it?

A. In this case it does for reasons which I'll go into if you'd like.

Q. Sure. I would.

A. Okay. Respiratory embarrassment per se doesn't mean you'll sustain brain damage, but at the time he had a sodium of 102 which was documented very shortly thereafter. This is very likely to cause herniation of the brain and respiratory embarrassment. So it fits with what was likely to have happened. The other thing that is very

interesting is that in this note, he became acutely obtunded which would happen again from a lot of things, but would happen if he herniated his brain which is apt to happen with a sodium of 102, and his pupils were dilated. When one herniates, it puts pressure, retraction on the third nerve and will lead to dilated pupils. This is very well documented in the neurology literature. So everything fits that that's what happened.

Q. Cannot other things cause a person to be obtunded and his pupils dilated?

A. None that come to mind offhand. Especially with sodiums of 102.

Q. When the sodium was corrected, that would not of course change brain damage if it had already occurred; correct?

A. Yes, it does to some extent.

Q. Does it?

A. Yes.

Q. And was his sodium corrected sufficiently in your opinion?

A. Well, it was corrected into a reasonable range, in the 130s on multiple determinations.

Q. But retrospectively it certainly didn't meet

with the standard as set forth in your article, right?

MR. JACKSON: Object to that.

You can answer.

A. Well, it's a standard that went into effect -- was published after the case occurred.

Q. I said retrospectively.

A. Okay, retrospectively it did not, but again this was published after this case had occurred.

Q. And you found in that article that increasing it by over 25 in a 48-hour period can also cause brain damage, didn't you, doctor?

A. Yes, we did.

Q. But that didn't cause it in this case in your opinion?

A. I believe not.

Q. Getting back to an earlier question I think that got us on this topic, why is it that you believe that the insult that he suffered during the operation caused his respiratory arrest later on that evening?

A. It's a very, very well-described syndrome and he fits it perfectly. It's called --

Q. Described by whom?

A. It's called delayed post-anoxic encephalopathy.

You'll find both a diagram of it and a description in an article I published on June 12, 1986, in the New England Journal of Medicine. And basically people who had hyponatremia, in fact in that article the sodiums I believe were about 105 -- his was 102 -- suffer respiratory embarrassment, then have some degree of recovery over hours to even a day or two, and then go back in a coma, again have a second respiratory embarrassment, and then they do not recover. They either suffer permanent brain damage or die, which is exactly what happened. He fits almost perfectly with that syndrome, which is very well described for things other than hyponatremia and those are all referenced in my 1986 article. In fact, I notice you have a copy of it, I'll point out the figure which shows his course if you'd like.

Q. I see it.

A. Figure 1 in that article.

Q. Did you recommend how it was to be treated in that article, doctor?

A. We were not able to find any way of discerning who was apt to get this syndrome in that article.

permanent brain damage.

Q. Well, was --

A. That statement itself only refers to the fact that just rapid correction as described here doesn't cause any damage, and that's all it means.

Q. Did the physicians that treated Mr. Kubach describe him suffering a respiratory arrest during the operation, sir?

A. No, they did not.

Q. I mean, were they not observant enough to notice what you've apparently noticed?

A. Well, they describe what is quite consistent with a respiratory arrest. They may not have recognized it for what it was. They did notice something wrong and they terminated the operation immediately, so they certainly noticed something and reacted promptly and appropriately, I think.

Q. They didn't call it respiratory arrest.

A. No, I think they may not have recognized it for that. It may not have been arrest, it may have just been respiratory depression. But the central thing is that he had enough respiratory depression to suffer cerebral hypoxia.

restriction -- well, low protein diet and a couple of things that prevent ammonia from being formed in the colon, including lactulose as one and also sorbitol sometimes to prevent its being formed in the colon, its excretion or voiding, three things, and encouraging ammonia to accumulate in the brain such as thiazide diuretics that encourage ammonia to move into the brain. So there's at least those four things. Another one is to sterilize the bowel with broad spectrum nonabsorbable antibiotics such as neomycin which cuts down ammonia formation. There's five ways of treating it, all in patients with liver disease.

Q. I take it, then, since you've read Dr. Ayus's deposition, you disagree with his conclusion as how it should have been treated in this case and, that is, by prophylactically intubating Mr. Kubach?

A. Yes, I do.

Q. Have you testified before, doctor?

A. Yes, I have.

Q. How often?

A. I have been in trials approximately half a dozen times over about, say, 11 or 12 years.

Q. Have they been for plaintiffs and defendants?
A. About half and half.
Q. Have you testified in a case involving hyperammonemia?
A. No, I never have.
Q. Have you ever been retained in a case involving hyperammonemia?
A. No, I haven't.
Q. So this is the first one?
A. Yes, it is.
Q. Was there evidence of central pontine myelination in Mr. Kubach?
A. I saw no evidence that that had occurred.
Q. Is that important in trying to determine whether or not hyponatremia caused brain damage?
A. You are entering an area which is held in, well, say there's a lot of disagreement in the medical literature. It is my belief that the two are utterly unrelated.
Q. Have you written on that subject, doctor?
A. Extensively, yes.
Q. So that if hyponatremia does cause brain damage, you would not expect to see that, then, or if you saw it, it would be just a coincidence?
MR. JACKSON: Expect to see what?

MR. KAMPINSKI: Central pontine --

MR. JACKSON: CPM?

MR. KAMPINSKI: Yes.

A. Well, I can clarify that, central pontine myelinolysis, which I would like to call CPM, refers to demyelination of the pons. This was described over 30 years ago in alcoholic, malnourished individuals. In someone with hyponatremia, you may in fact see demyelination in the pons but usually there is also demyelination in many other places in the brain, and information which I have in press now and studies I'm working on, including autopsies on over 34 such patients demonstrates rather conclusively that this is all due to hypoxia which can also cause demyelination. So that CPM is an entity which has nothing to do with hyponatremia, but there may well be demyelination of the pons.

Q. Well, are you saying that the results of the hyponatremia would cause demyelination of the pons?

A. That's right. They could. Not that they would. They might. They might.

Q. By creating a hypoxic condition in the patient?

A. That's right.
Q. And hypoxia is what, doctor?
A. Not enough oxygen getting to the brain, for this discussion.
Q. And is that what happened to Mr. Kubach?
A. That is what I believe happened.
Q. Then is there a reason there was no CPM found?
A. I just got through saying CPM is not related to hyponatremia. There shouldn't be CPM.
Q. No, I thought you said it was related to hypoxia when I asked you.
A. I said there may be demyelination of the pons and there may not be.
Q. Does it depend on the extent of the hypoxia?
A. I don't know what it depends on.
Q. So that doesn't affect your conclusion that there was no evidence of CPM?
A. It doesn't mean anything at all one way or the other.
Q. In your '86 article, there was no conclusion regarding increasing the sodium within any given period of time; is that correct?
MR. JACKSON: Are you talking about the '86 article that was referred to earlier in the deposition?

MR. KAMPINSKI: Yes. His article.

A. There was no conclusion on that point, that's correct.

Q. Doctor, do you have an opinion one way or another as to whether or not the physicians and/or hospital in this case, regardless of what you've indicated you believe occurred during the operation, failed to adhere to the standards of care required of them subsequent to the operation? Do you have any opinions on that?

A. You said the physician? You really have to give me a specific instance in order for me to tell you whether I think it's reasonable.

Q. That's fair.

Do you believe that it was appropriate to leave Dr. Jayanthi in charge of the care of Mr. Kubach on the evening that he had his arrest?

MR. JACKSON: I'll object to that because I'm not sure whether you would characterize that as what in fact happened, but can you answer that, doctor?

MR. GARDNER: Show my objection.

THE WITNESS: Should I answer it?

MR. JACKSON: Yes, you may answer it.

A. Dr. Jayanthi was an intern at that time. In my opinion he was not, quotes, in charge of the care. He was a house officer acting under the guidance of the hospital and attending physician. This is the way it's done in virtually every teaching institution in the United States, Canada, and the United Kingdom. So I think what was done with him is, quotes, common practice at a teaching hospital.

Q. That doesn't make it right, though, if he's not competent.

A. I think it's quite appropriate. Because the understanding is that the attending and the intern, or resident, or both, will have an agreement as to what to do if the patient looks bad.

Q. Well, does he need some level of understanding of the problem to understand, or to know when the patient looks bad? I mean, you read Dr. Jayanthi's deposition.

A. Yes, I did.

Q. And did he have a pretty good working knowledge of hyperammonemia and hyponatremia?

A. No, he didn't.

Q. Then why in the world was he caring for this

patient that night?

MR. JACKSON: Again I'll object to your characterization.

MR. GARDNER: Objection.

MR. JACKSON: Go ahead and answer, doctor.

A. Hyperammonemia as I've already stated is not a clinical problem, has never been shown to be in patients without severe liver failure. Even in those it's never been shown to be a problem. So I don't think that really means anything, whether he knew how to treat hyperammonemia or didn't. He was also not a medical intern, he was on the surgery service. As far as treating hyponatremia, he didn't know how to treat it from his deposition, I imagine. However, it is not necessary. If the patient has it, if he doesn't know how to do it himself, get help from someone who does.

Q. Did Dr. Angell have a pretty good working knowledge of hyponatremia?

MR. GARDNER: Objection.

A. I think you misstated yourself. You meant hyperammonemia, didn't you? You said hyponatremia.

Q. That's right. I did. After I say it about 80 times, I do get it confused and I apologize.
A. Just fair in my opinion. But again I don't think that's a clinical problem at all.
Q. If you're wrong, doctor, then it certainly would have been important for some -- well, let me back up. I mean, you've read the depositions of Dr. Nearman, of Dr. Kursh, of Dr. Lockrem, of Dr. Ayus, they all believe, every one of them, that hyperammonemia does cause central nervous system depression. I mean, you read that in those depositions, didn't you, doctor?
A. No, I didn't.
Q. You didn't?
A. I read that Dr. Ayus did. You'll have to really show me a specific part,
Q. Sure.
A. That's not the impression I gained.
Q. Have you read Dr. Lockrem's deposition, doctor?
A. Yes.
Q. Page 11.

MR. JACKSON: I don't have it here.

MR. KAMPINSKI: Again I'll let him look along.

MR. JACKSON: Okay.

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Q. Did Dr. Angell have a pretty good working knowledge of hyponatremia?

MR. GARDNER: Objection.

A. I think you misstated yourself. You meant hyperammonemia, didn't you? You said hyponatremia.

Q. That's right. I did. After I say it about 80 times, I do get it confused and I apologize.
A. Just fair in my opinion. But again I don't think that's a clinical problem at all.
Q. If you're wrong, doctor, then it certainly would have been important for some -- well, let me back up. I mean, you've read the depositions of Dr. Nearman, of Dr. Kursh, of Dr. Lockrem, of Dr. Ayus, they all believe, every one of them, that hyperammonemia does cause central nervous system depression. I mean, you read that in those depositions, didn't you, doctor?
A. No, I didn't.
Q. You didn't?
A. I read that Dr. Ayus did. You'll have to really show me a specific part.
Q. Sure.
A. That's not the impression I gained.
Q. Have you read Dr. Lockrem's deposition, doctor?
A. Yes.
Q. Page 11.

MR. JACKSON: I don't have it here.

MR. KAMPINSKI: Again I'll let him look along.

MR. JACKSON: Okay.

Q. Page 10, actually. "Can hyperammonemia cause central nervous system depression?"

Okay?

A. I said possibly, a lot of people believe so in the presence of liver disease. This question doesn't qualify it at all.

Yes, it can, possibly in the presence of liver disease. That's a non sequitur.

Q. Well, he didn't qualify it. And we were talking about this patient who didn't have liver disease, doctor.

MR. JACKSON: You don't comment on this patient in that question.

Q. Well, did you read the note of Dr. Kursh on September 16th in the record?

A. Yes. I'll have to refer to it again.

Q. Sure. Go ahead.

MR. JACKSON: You're talking about which note? Physician's orders?

MR. KAMPINSKI: No, his progress note.

MR. JACKSON: Progress note?

MR. KAMPINSKI: Yes.

A. Well, I agree with at least 85 percent of his note. He states that the neurologic status is a

result of the respiratory and maybe cardiac arrest and resultant hypoxia. That's exactly the way I feel. Then he says this was a consequence of the water intoxication, which is correct. Then he says the hyperammonemia, which I don't agree with.

Anyway, I should state from the onset I'm not really concerned with what anybody else says. I'm really concerned with only clinical or experimental data which in my opinion none exists. Opinions don't really mean anything to me at all.

Q So that your opinion is the only one that would matter, then?

MR. JACKSON: Don't answer that question, doctor. I don't think he means that as a serious question. That's not what the doctor said.

MR. KAMPINSKI: No, he just said opinions don't mean anything to him.

MR. JACKSON: No, that's a mischaracterization of what he said. He told you that he bases it upon data. Not opinions.

Q Don't you think that Dr. Kursh based it on data, too, or did he just make it up?

A. Well, if there is data, the National Library of Medicine computer couldn't spew it up. In my opinion, none exists, that's all. I have not seen any data which suggests that to be the case at all.

Q. My question earlier was, did you see in the depositions of these various doctors that they believe that hyperammonemia does in fact cause central nervous system depression? Apparently you've missed that; right?

MR. **JACKSON**: I'll object. *Go* ahead, doctor, and answer.

A. From what you've shown me that is not my opinion. It's my opinion he was referring or thinking of patients with liver disease. And there's at least some evidence that may be the case.

Q. What does hyperammonemia do to someone who doesn't have liver disease?

A. In my opinion and after a very thorough review of the literature on this, there is no evidence it does anything at all.

Q. *So* it doesn't matter what the level is, then, right?

A. I'm sure there must be a level it would do

something bad, but if that's the case, it hasn't been determined. Simply there is no data suggesting it does anything. That doesn't mean that it absolutely doesn't but simply there is no evidence that it does or does not.

Q. Well, why even check what the level is if it doesn't matter?

A. I see no reason to check in someone who doesn't have severe liver disease.

Q. Why was it checked in Mr. Kubach?

A. Somebody did it. I'm not totally sure why.

Q. Well, once you get an abnormal reading, and it was abnormal, was it not, doctor, of 343?

A. Yes.

Q. It was elevated?

A. Yes, it was.

Q. Don't you then have a duty to repeat it to see what it is again? To see where the ammonia is going? I mean, even with what you say at some level it may be harmful and, you know, perhaps we don't know what that is, but do you know what the level was, let's say at 6 o'clock that night, the ammonia level of Mr. Kubach?

A. It was in the normal range --

Q. It was?

A. -- I don't remember the number.
Q. And what leads you to conclude that, doctor?
A. I read the lab value.
Q. Which lab value?

MR. JACKSON: I think he's confusing the question, doctor.

MR. KAMPINSKI: I certainly didn't mean to.

MR. JACKSON: He wanted to know if there was a specific ammonia level that was in the chart as of 6 o'clock the evening that he had the arrest, after the surgery. That's what he's asking. There is no lab value. We know that.

MR. KAMPINSKI: Well, apparently the doctor doesn't, because he read some value, and I don't know what he's referring to.

THE WITNESS: The only values I was able to come up with was an initial level was 93 microgram per deciliter with a normal range of 80 to 110 and two hours postop it was 343 microgram per deciliter, same normal range. That's all that I was able to come up with.

Q. Well, all right. My question, and I'll ask it again, is, what was it prior to his arrest but

after the 343 reading? I mean, do you know?
A. No, I don't.
Q. would you expect that it had gone up?
A. I will again say I don't think it makes the slightest bit of difference.
Q. That's not my question, doctor.
A. And would I expect it to go up?
Q. Yes, sir.
A. It all depends whether it had reached its peak. The ammonia comes from the metabolism of glycine which is absorbed through veins in the bladder, it will go up to a point, and then start down. I can't say when that point may have been reached. There's no evidence to allow me to do that.
Q. If you bring the sodium level to an acceptable level, which was done at what time with Mr. Kubach approximately?
A. It was certainly at an acceptable level at.... I would say it was at a reasonably acceptable level when it was 125. And the time there was 1835, it was 125.
Q. I'm sorry, at what time, doctor?
A. Certainly when it was at 125 at 1835, that was a reasonable level.

Q. So that would be 6:30?
A. Yes.
Q. Did his condition improve after his sodium reached an acceptable level?
A. Not noticeably, no.
Q. Did it deteriorate?
A. Not at that point.
Q. Did it subsequently deteriorate prior to the arrest?
A. Yes.
Q. Should something have been done when it did deteriorate in your opinion?
MR. JACKSON: At what point?
MR. KAMPINSKI: At any point prior to the arrest.
A. From what I believe happened, I'm not sure what anybody could have done. I think it would have been nice, but I don't know what to do.
Q. Doctor, I understand your opinion, I mean, I really do. I understand that you're saying that whatever was done didn't proximately cause this man's death. Is that a fair statement?
A. Yes.
Q. Okay.
A. I think --

Q. Now, I don't agree with you and obviously Dr. Ayus doesn't agree with you, and it's going to be up to a jury to decide that, but the question I have is whether or not what they did was appropriate. You know, maybe we can clear out some issues and deal with the ones you think are important. I mean, you know, if they were negligent, maybe the attorneys will admit that and we can deal with proximate cause.

A. I wouldn't have known what else to do. In other words, his sodium was brought up to an acceptable level, it was not raised to hypernatremic levels, and by standards in existence at that time, I think it was quite satisfactory. Everybody wouldn't agree with it, but taking the literature as a whole, it's quite satisfactory.

Q. The treatment?

A. Yes, the treatment of hyponatremia.

Q. What about the treatment of his clinical condition: Was that satisfactory? Should repeat blood gases have been done, for example?

A. Well, the main thing that can cause problems would be a low oxygen, and there are no documentations of a low oxygen.

Kubach?

A. I think that would have been a reasonable thing to do.

Q. And just assume for the sake of argument that they would have shown a further, or a diminished oxygen supply to Mr. Kubach: Do you think that intubating him with ventilatory assistance would have made a difference?

MR. JACKSON: I'll object. Go ahead and answer.

MR. GARDNER: Same objection.

A. Well, I will answer that as a purely hypothetical situation.

Q. Sure.

A. You're telling me if they had done a gas and if his oxygen had been inadequate and if they had intubated him and mechanically ventilated him, could that have made a difference? It certainly could have, if all those things took place in this hypothetical situation.

Q. Well, we've agreed that the blood gases should have been done.

A. I think it would have been a reasonable thing to do.

Q. All right. At some point before his arrest, do

you believe that the blood gases would have been abnormal?

A. I have to in all honesty say I don't know, and I'll explain that. Because in the patients I describe in that June 12, 1986 New England Journal article, blood gases weren't done prior to their second arrest, so I don't truly know if it would have been abnormal or not. However, I know of no way to prevent it from happening. So even if --

Q. Prevent what from happening?

A. The second arrest. In other words, I think that his fate was sealed in the OR, and I don't think there's anything one could have done about it. We have -- I've since studied over a dozen additional patients with this same syndrome and I have yet to figure out what to do to prevent it from happening.

Now, as to whether the blood gas would have been abnormal, I truly don't know. I just don't know.

Q. Do you believe that the, or do you have any opinion as to whether or not the nursing care, or maybe I should say the lack of care provided by Nurse Lamb was adequate on the evening prior

to Mr. Kubach's respiratory arrest?

MR. JACKSON: I'm going to object.

MR. GARDNER: Objection.

MR. JACKSON: The doctor is not here to state opinions of nursing care, he was not asked to do that, and he's not going to state any such opinions at trial. That's what you're here to explore. That's not appropriate.

MR. KAMPINSKI: 1 think the rules provide that I can ask any question that's relevant in the case. I mean, that's what the rules provide.

MR. JACKSON: I think if you read the rule on deposing an expert, it indicates that you're entitled to explore the opinions that he will state at trial. He is not retained to state opinions on behalf of, or as it relates to the nurses.

MR. GARDNER: And I will have a continuing objection to any question along this line and especially an objection to the characterization of the nursing care as lack of care.

MR. KAMPINSKI: I'm not going to argue with him.

MR. JACKSON: Okay.

MR. KAMPINSKI: You're not going to let him answer these questions?

MR. JACKSON: I don't think it's an appropriate question. He wasn't retained for that, he didn't review the records for that.

MR. KAMPINSKI: I honestly don't care whether you think it's appropriate or not. All 1 care about is whether you're going to let him answer.

MR. JACKSON: I'm not going to let him answer.

MR. KAMPINSKI: Okay.

MR. JACKSON: Because I don't think it's an appropriate question. If he's going to state such an opinion, we will let you know well in advance of trial --

MR. KAMPINSKI: I told you I'm not going to argue with you, Mr. Jackson.

MR. JACKSON: -- and make him available for you.

MR. KAMPINSKI: Mr. Jackson, as long as you just tell me that he's not going to answer the question, I can move on. That's simple. Is he or isn't he?

MR. JACKSON: Move on. Next question, please.

Q. Do you have any opinion as to whether or not the care provided by Dr. Jayanthi on the evening of Mr. Kubach's arrest prior to the arrest was appropriate?

MR. GARDNER: Objection.

MR. JACKSON: Same objection, for the same reasons. He reviewed this and was retained to render opinions regarding Dr. Kursh and Nearman.

MR. KAMPINSKI: It's one thing to object, it's another thing to tell him not to answer. So I'm waiting to see if you're going to let him answer the question.

MR. JACKSON: If you're here to explore the opinions he's going to state at trial, you're entitled to ask him those questions. He's not going to state an opinion regarding Dr. Jayanthi at the trial of this case. We tell you that so it will save you the time of having to explore that.

MR. KAMPINSKI: Mr. Jackson.

MR. JACKSON: Let's go to the next question.

MR. KAMPINSKI: No, please. Are you instructing him not to answer? It's a simple question.

MR. JACKSON: The doctor will answer appropriate questions. That's not appropriate. You can go on to the next question.

MR. KAMPINSKI: Are you instructing him not to answer, sir?

MR. JACKSON: I'm telling you to go on to the next question.

MR. KAMPINSKI: Read that question back until I either hear you're not going to let him answer it or he answers it. That's simple. I mean, I'm not playing games with you, just tell me if you're telling him not to answer.

MR. JACKSON: That's exactly what we're playing. He's not going to state an opinion as it relates to Dr. Jayanthi. He didn't review this matter with that in mind.

MR. KAMPINSKI: That has nothing to do with what I can ask him. You and I can disagree. If you tell him not to answer it, I'll move on. That's simple.

MR. JACKSON: Move on.

MR. KAMPINSKI: You're telling him not to answer?

MR. JACKSON: Move on.

MR. KAMPINSKI: Okay. I'll accept that.

Q. In your report, doctor, you state the following: The treatment of the hyponatremia was certainly appropriate by standards present in August of 1987.

Is that your opinion, doctor?

A. Yes.

Q. All right. Did Dr. Jayanthi appropriately treat hyponatremia in your opinion?

MR. GARDNER: Objection.

MR. JACKSON: Objection, Same question as before, doctor. If you have an opinion, go ahead and answer it.

A. I don't have an opinion.

Q. Doctor, there is an ammonia level set forth in the SICU note of 94. Did you notice that?

MR. JACKSON: Let me show you what he's referring to, doctor.

A. Okay.

Q. Do you know where that came from?

A. Do I know where it came from?

Q. Yes.
A. I don't know what you mean by where did it come from.
Q. Well, is there anything that would indicate?
A. I presume that someone drew blood and measured ammonia. I don't know what you mean by where it came from.
Q. Well, does it correlate to any of the lab values?
MR. JACKSON: It does not. And that's been an established fact I think in the case.
MR. KAMPINSKI: Mr. Jackson.
A. It doesn't have units. Whether we know it's millimoles per liter, micromoles per liter, micrograms per deciliter, several sets of units are used to measure ammonia. This has no units.
Q. Well, does it correlate to any unit that was drawn by the lab in this case?
A. Yeah, there was an initial level of 93 microgram per deciliter and that's pretty close to 94.
Q. Why would you write 94 if it's 93? At what time was that, by the way?
A. 2200 hours.

Q. That's 10 o'clock?
A. Yes.
Q. And the 93 was done at 10 a.m.? This is 10 p.m.
MR. JACKSON: Doctor, so that we don't play games, it's already been an established fact there's no lab sheet for the 94. He knows that. He's been through it in other depositions.
A. I can only read it. I don't know where it came from. You're asking me and I simply don't know.
Q. Well, I mean, if you're a physician, for example, and you take a look at this ammonia level, if you're walking by the patient and you look at the chart, would that somewhat satisfy you that the ammonia level had in fact gone down?
A. Well, it is within the normal range if you assume that it's micrograms per deciliter.
Q. You know, all I can do is read what's there, too, doctor. It says 94; right?
A. Well, the normal range is 80 to 110.
Q. All right. So would that then as a physician looking at this chart tell you that the man's ammonia level was fine at 10 o'clock that night?
A. Well, again I don't have units there, but -- it

might, if the units were the same.

Q. Let's assume they are.. I mean, I don't know why they wouldn't be.

A. Because different labs measure things with different units.

Q. This is the same lab, doctor.

A. I have to make that proviso because it may not be the same units. Assuming they're the same units, that means that the level is normal. That's all I can really say.

Q. Doctor, could you tell me why in your report which was July 17th, 1989, that you referred to the respiratory arrest occurring at 2300 hours followed by cardiac arrest, and then you relate the anoxia secondary to the respiratory arrest? And there's only one referred to in your report and that's the one that occurred at 2300 hours.

A. I hadn't gone through the records in the detail that I have subsequently. The honest answer is I've now gone through them in much greater detail.

Q. Well, doctor, you set forth the fact that he left the operating room with, developed twitchy movements with mental status deterioration and you give the laboratory levels, do you not,

doctor?

A. Yes.

Q. So you had that information then, didn't you, doctor?

A. I've already answered the question. I have gone through the records in much more detail since then. And that's the only answer I can give you.

I do mention, by the way, that after 35 minutes of procedure, the patient developed twitchy movements and mental status deterioration.

Q. Sure.

A. And in going through it in more detail, correlating it with the blood gases and everything else, it seems quite clear that was when he had respiratory embarrassment.

Q. Just hypothetically, doctor, if there were case studies or reports establishing central nervous system depression in the case of hyperammonemia without liver disease, would that change your opinion at all?

MR. JACKSON: Objection. *Go* ahead and answer that.

A. I couldn't possibly answer that question without

actually seeing the data, who did what. There are all levels of research, some of which is good and some which are not. I would have to read it. I would like to add this, though: There are certainly hundreds of thousands of prostate operations done every year where the patients receive glycine and distilled water in the bladder. Presumably in every one of those, the ammonia level goes up to elevated levels, and I'm not aware of any report of any patient ever suffering from that. So you have there a base of millions of patients with hyperammonemia with no ill consequences. It seems to me, I can't see any reasonable degree of likelihood that such a thing could ever happen, but anything is theoretically possible.

Q. It may have happened here, theoretically?

A. I don't believe it's -- I don't believe it's possible. I would say it's at the 99 percent level. It's only a theoretical consideration.

Q. Getting back to my question, though, since we're dealing with theoretical considerations, if there was such documentation, would it change your opinion, doctor?

MR. JACKSON: I believe he answered

your question.

A. I think I have. I'd have to read it. What one person might consider documentation, others may not. I would have to read it.

Q. In other words, it would have to be documentation from, what, a well-recognized establishment, printed in a well-recognized peer review journal?

A. It would have to be printed in a well-recognized peer review journal. The recognition of the establishment has nothing to do with it at all. It depends on how good the experiments were and how well they demonstrated what they were supposed to show, no matter who did them.

Q. Do you have any opinion, doctor, as to whether either Dr. Nearman or Dr. Kursh failed to adhere to the appropriate standard of care required of them?

A. Yes, I do.

Q. And your opinion is what, doctor?

A. I don't see any deviation from the standard of care in their performance.

Q. Who's ultimately responsible for a failure of a resident to properly perform? Is that the attending?

MR. JACKSON: I'm going to object.

MR. GARDNER: Objection.

MR. JACKSON: I'm going to ask you to give him specific circumstances.

Q. Well, you and I both agreed earlier that additional blood gases should have been done after 6:30, and they weren't.

MR. GARDNER: Objection as to what the testimony was.

MR. JACKSON: That's not been established that that's the reasonable thing to do. That was his answer.

MR. KAMPINSKI: He said what he said and I think I have a pretty good recollection of what he said, and I think the doctor does, too.

Q. Whose responsibility was it to have additional blood gases done, doctor?

A. Well, it is ultimately the attending's responsibility in my opinion.

Q. If Mr. Kubach should have been hypothetically intubated prior to his respiratory arrest, whose responsibility would it have been to have seen that that was done?

MR. JACKSON: Object.

MR. GARDNER: Objection.

Q. Hypothetically.

MR. JACKSON: No, no, we're not going --

Q. Well, it's not hypothetically. I mean, assuming it's Dr. Ayus's belief and not yours. Whose responsibility is that?

MR. JACKSON: Objection to that. He doesn't believe it was necessary or appropriate.

MR. KAMPINSKI: Well, all hypotheticals require the underlying facts to be found true, and, you know, that's a caveat that I'm agreeable to with the doctor.

MR. JACKSON: You're asking him to base an opinion on facts which he does not believe to be true. And he's stated that.

MR. KAMPINSKI: That's always true in a hypothetical, Mr. Jackson.

MR. JACKSON: That's not always true. There's supposed to be proof of the underlying facts in a hypothetical before you can ask someone to state an opinion.

MR. KAMPINSKI: Well, he can't rely on proven facts. Those will come from records,

from documents and the jury will decide on what those facts were.

MR. JACKSON: The underlying fact was and then your question upon which it was premised was if he should have been prophylactically intubated.

MR. KAMPINSKI: That's right.

MR. JACKSON: And this doctor has told you that he does not believe that that was a necessary thing.

MR. KAMPINSKI: I heard him.

MR. JACKSON: So you're asking him to state a fact on something that he doesn't believe.

MR. KAMPINSKI: No, I'm asking whose responsibility it would have been to do that if in fact it should have been done. That's all I'm asking.

MR. JACKSON: Go ahead, doctor. You can answer.

A. Okay. You're asking -- let me restate the question.

Q. All right.

A. Strictly you're presenting me with a hypothetical situation where a hypothetical

patient required intubation for some medical reason and it wasn't done, whose responsibility was it that it wasn't done? Is that the situation? Is that correct, is that what you're asking me?

Q. That's fine.

A. Okay. In that hypothetical situation, it depends on what the arrangement was between the house officers and the attending. Typically it is the attending's fault unless -- the "unless" is unless the resident deviated from the standard set forth to him by the attending, and I'll give an example. That the attending says, "Call me if the patient starts breathing at 30 minutes and looks as if he's having respiratory difficulties." The patient starts breathing at 30 minutes and has respiratory difficulties, and the resident sees it and doesn't call the attending. Then it's the resident's fault because he has deviated from that. The agreement is that the attending sets forth how the patient is to be treated and the resident is carrying out his orders on that.

Q. I see what you're saying.

What was the condition of Mr. Kubach's

breathing at, let's say 9 o'clock that night?

A. The respiratory rate is quite reasonable for a postoperative patient. I don't really see a specific comment on his breathing one way or the other in the nurses notes.

Q. Is there a comment about anything one way or the other at 2100?

MR. JACKSON: You mean in the nurses notes?

MR. KAMPINSKI: Yes.

MR. JACKSON: As opposed to these other numbers?

MR. KAMPINSKI: Yes.

A. There is no comment at all at 2100.

Q. How about before that? How about at 2100, how was his breathing?

A. That's what you just said.

Q. I'm sorry. At 2000.

MR. JACKSON: You want to know if there's a specific comment or you want him to read the numbers?

Q. No, is there any comment about how he was breathing?

A. No.

Q. How about at 1900: How was he breathing then?

A. There was a comment at 1910.
Q. Okay. How was he doing?
A. It doesn't say anything about his breathing. It's just a comment.
Q. Could I see yours for a second, doctor?
A. This is theirs.
Q. Doctor, this note down here, we know that that was written after the arrest but attempts to relate the events that occurred before the arrest, and you're aware of that from reading Nurse Lamb's deposition; correct?
A. Yes, that's correct.
Q. And retrospectively, she tries to indicate what his condition was at various times during the night. How was his breathing at 9:35? Is that the right time?

MR. JACKSON: Is there a specific reference you want him --

MR. KAMPINSKI: Yes, sonorous, Kussmaul.

Q. Is that good?
A. That indicates some degree of respiratory embarrassment.
Q. And there is questionable seizure activity, I think, reflected -- that was in an earlier note,

Q. So just sitting there and watching him is okay, then?

MR. JACKSON: Objection, but go ahead and answer, doctor.

A. I have to repeat what I just said. It would be nice to do something, but I wouldn't really know what that would be. In other words, I think that at this point, he had suffered irreparable brain damage and was going to have a second respiratory arrest which he very shortly did, but I think there was absolutely nothing that could have been done. That's what I mean when I said it would have been nice to do something.

Q. Well, they should have probably just taken him right out of the OR into the meat wagon then, huh?

MR. JACKSON: Doctor --

MR. GARDNER: Object.

MR. JACKSON: You don't have to answer a question like that. He knows better than to do that.

Q. You indicated earlier, doctor, that you had been, or that you had testified, I think you said, half a dozen times, or a dozen times? I don't remember what you said.

A. About that. About half a dozen times.
Q. All right. How many times have you been retained to give opinions whether you've testified or not? Just roughly.
A. Roughly about half a dozen a year for about the last 11 years, see. So 60 to 70 cases.
Q. I'm sorry. Half a dozen?
A. Half a dozen a year for the last 10 or 11 years. So 60 or 70 cases total.
Q. And what would you consider the percentage to be plaintiffs and defendants?
A. Very close to 50-50.
Q. Have you ever been retained by PIE before?
A. No, I have not.
Q. Or by Mr. Jackson, or anybody in his firm?
A. No, I have not.
Q. Doctor, after his -- after Mr. Kubach's sodium level had reached, I think you said, 125 was okay at about, was that 7 o'clock?
MR. JACKSON: It appears at 18 something.
A. About 6:30.
Q. 6:30. Okay.
Why did he continue to deteriorate after that if his sodium had been --

MR. **JACKSON:** I'm going to object. You're saying he was in the process of deterioration, had been deteriorating? Because I don't think there's been any testimony about that.

Q. Well, did he deteriorate after that, doctor?

A. It all depends on what you mean in the context. He eventually had a respiratory arrest and died, so that's certainly deteriorating.

Q. That's probably not what I mean.

MR. **JACKSON:** He'll explain that, doctor, if you want.

Q. I mean deteriorating between the time the sodium level had gotten to an acceptable point and the time he had his arrest.

a. He had what I consider a very typical course for delayed post-anoxic encephalopathy. After a period of a few hours, as little as that, to a few days, they develop diffuse neurological symptoms which can consist of all the things he had plus a few more and have a respiratory arrest which often comes on suddenly and unexpectedly, and there is no way of predicting which patients are going to recover when the sodium is treated and which are going to develop

an arrest. And I think I ought to add that it's very well known and well documented, older individuals recover from metabolic encephalopathy much, much more slowly. Even after everything is corrected, it may take several days, I've seen as long as a week before they regain a reasonable mental status.

Q. Let me just follow up on the point you just made, doctor: The arrest that Mr. Kubach had you're saying was predictable based upon what happened in the operating room? Is that your testimony?

A. I'm saying that retrospectively what happened to him is very compatible with the syndrome of delayed post-anoxic encephalopathy and we don't know, do not know how to predict who this is going to happen to.

Q. And it can happen rapidly? It can happen without any warning, right? The arrest? The second arrest?

A. It often does, yes.

Q. And that's described in your '86 paper?

A. Yes.

Q. Which had been published by the time Mr. Kubach was seen at University?

A. Yes.
Q. Well, if physicians knowing that, and that was the standard of care which I think you said right from the start probably ought to be, you know, not immodestly, I might add, why didn't they prophylactically intubate him to prevent that from occurring?
A. It doesn't make any difference.
MR. JACKSON: Object.
A. In that syndrome, the initial insult is irreversible. The second respiratory arrest, he would die, but it wouldn't matter if they were intubated or not. It makes absolutely no difference. This is a very, very well-documented syndrome. There are hundreds of cases of this in the literature, often associated with cases such as carbon monoxide, drowning, strangulation.
Q. So you don't prophylactically intubate patients once they've had the initial insult to prevent the second respiratory arrest from occurring?
MR. JACKSON: Object. Go ahead.
A. I already said there is no way of knowing who this is going to happen to. You can't prophylactically intubate everybody with

hyponatremia, you would be intubating tens of thousands of patients which is not very practical, since intubation itself has a not insubstantial morbidity. Also, in that select group who are going to develop this syndrome, it does no good, so prophylactic intubation is useless, anyway, and has a morbidity in itself, so, no, you don't.

Q. What is it that causes them to have the second respiratory arrest?

A. The brain damage which is caused by hypoxia doesn't; become manifest for, again, as I said, periods of several hours to several days. Why this occurs at a cellular level has not yet been worked out, so I can tell you that it's been well described clinically but I can't tell you what happens at the cellular level.

Q. Doctor, in those patients that you've treated where this syndrome has occurred, have you also taken ammonia level readings on these patients?

A. No.

Q. Well, maybe we just solved the mystery.

A. I don't think so.

MR. KAMPINSKI: Have you got any questions?

MR. GARDNER: No questions.

MR. KAMPINSKI: I assume you want him to read it?

MR. JACKSON: Yes. I would prefer that.

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ALLEN I. ARIEFF, M.D.

C E R T I F I C A T E

The State of Ohio,) SS:
County of Cuyahoga.)

I, William L. Odom, a Notary Public within and for the State of Ohio, authorized to administer oaths and to take and certify depositions, do hereby certify that the above-named ALLEN I. ARIEFF, M.D., was by me, before the giving of his deposition, first duly sworn to testify the truth, the whole truth, and nothing but the truth; that the deposition as above-set forth was reduced to writing by me by means of stenotypy, and was later transcribed into typewriting under my direction; that this is a true record of the testimony given by the witness, and was subscribed by said witness in my presence; that said deposition was taken at the aforementioned time, date and place, pursuant to notice or stipulations of counsel; that I am not a relative or employee or attorney of any of the parties, or a relative or employee of such attorney or financially interested in this action.

IN WITNESS WHEREOF, I have hereunto set my hand and seal of office, at Cleveland, Ohio, this ____ day of _____, A.D. 19 __.

_____
William L. Odom, Notary Public, State of Ohio
1750 Midland Building, Cleveland, Ohio 44115
My commission expires February 13, 1994

LAWYER'S NOTES

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